

REMARKS

In the August 17, 2011 Office Action, all of the claims stand rejected in view of prior art. No other objections or rejections are made in the Office Action.

Status of Claims and Amendments

In response to the Office Action, Applicants have amended claims 5, 9, 15 and 16. Applicant would like to thank the Examiner for the thorough examination of this application. Thus, claims 5-16 are pending, with claims 5, 9, 15 and 16 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of the above amendments and the following comments.

Interview Summary

On November 16, 2011, the undersigned conducted a telephonic interview with Examiner Henkel, who is in charge of the above-identified patent application. Applicant wishes to thank Examiner Henkel for the opportunity to discuss the above-identified patent application. During the interview, the discussion revolved around the prior art's disclosure (or lack thereof) with respect to (1) the "calibration data" of the independent claims and (2) the use of the "ambient temperature" in the independent claims.

With respect to the calibration data of the independent claims, it was explained that it is Applicant's opinion that Atwood does not use the "calibration constants" (paragraph [0323]) as recited in the claim. What is described in paragraph [0323] is a "calibration voltage generator 506" which supplies a multiplexer 494 with a reference voltage (see Figure 47A(2)). In addition, the calibration constants of paragraph [0331] are for calibration of temperature sensors. That is, the "calibration data" disclosed in paragraphs [0332] and [0331] are not considered in conjunction with a first target value and an ambient temperature in order to acquire a second target value used to control heating and cooling.

To repeat, the "calibration constants" are used for calibrating the temperature sensors, as described in paragraph [0331]. The sensors are calibrated by placing them in stable bath temperatures of 40 degrees and 95 degrees Celsius, unrelated to an ambient temperature. As such, the "calibration data" of Atwood is not used in relation to the ambient temperature of the environment in which the temperature control device is installed. Indeed, this point is

consistent with Atwood's objective of measuring temperatures accurately by obtaining calibration constants with respect to the relationship between the sensors and the voltage output at a constant temperature.

The Examiner and the undersigned did not come to an agreement in the interview with respect to the applicability of the prior art to the calibration data limitation of the claims. The Examiner indicated that paragraph [0323] of Atwood and pages 13-14 of Dean suggest the use of calibration data to find a second target value as recited in the claims.

With respect to the ambient temperature of the independent claims, the plate temperatures of Atwood (inside the housing) and Dean are being relied upon in the Office Action. As discussed in the interview, Dean discloses a method of predicting sample temperature and thereby controlling sample temperature by using a particular polynomial equation. This equation relates the sample temperature to the plate temperature (as opposed to the heat lamp flashing), in order to control for possible oscillations in temperature. Although components similar to those of the present application appear in Dean, and although the so-called "second target value" is based on "a relationship between said target value and said temperature inside said compartments," Dean clearly lacks any teaching that the so-called second target value be obtained in accordance with the ambient temperature of the environment in which the temperature control device is installed. In fact in Dean, the plate temperature is not even used to calculate the second target value. Accordingly, even if the control of Dean were somehow modified using Atwood's ambient temperature (paragraph [0110]), the independent claims would still not be met because, as discussed above, there is no value calculated in Atwood by relating the "calibration constants" with the ambient temperature of the environment in which the temperature control device is installed.

The Examiner and the undersigned came to an agreement that the use of an ambient *air* temperature in the present application is different from the use of the plate temperatures in both prior art references, Atwood and Dean. In view of the Examiner's helpful suggestion, Applicant has amended the independent claims to clarify that the ambient *air* temperature is being used in the claimed relationships, as explained further below. Applicant would again like to thank Examiner Henkel for her assistance during the interview.

Rejections - 35 U.S.C. § 102

In paragraph 4 of the Office Action, claim 16 stands rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0072112 (Atwood). In response, Applicant has amended claim 16 to more clearly distinguish the prior art of record.

In particular, independent claim 16 has been amended to clarify that the thermometer measures an ***ambient air temperature*** of an environment in which the device is installed. It is also recited in claim 16 that the calculation unit calculates a second target value based on a relationship among said target value, calibration data and said ambient ***air*** temperature, and the control unit controls the heater and cooling unit with the second target value such that control of temperatures inside the compartments is corrected by using the ambient ***air*** temperature measured by the thermometer. Clearly, this structure is ***not*** disclosed or suggested by Atwood or any other prior art of record.

As discussed in the interview with Examiner Henkel, and as the Examiner helpfully indicated, neither Atwood nor Dean teaches or suggests using an ambient air temperature in conjunction with calibration data and a target compartment temperature to correct control of compartment temperature. As the Examiner pointed out, Atwood and Dean both use plate temperatures but do not use air temperatures as recited in independent claim 16. As such, Atwood fails to teach the amended subject matter of claim 16.

With regard to the calibration data of independent claim 16, Applicant would like to simply state for the record that Applicant still believes the prior art fails to teach using calibration data as claimed. As discussed above in the interview summary, in Atwood the calibration data used to calibrate temperature sensors (paragraph [0331] of Atwood) in stable baths is not data that is used along with a target temperature value and an ambient temperature to find a “second target value” for temperature control. The calibration constants are merely temperature sensor calibration data. The “calibration voltage generator” of paragraph [0323] of Atwood is unrelated to the calibration constants of paragraph [0331]. Paragraph [0323] discloses that the calibration voltage generator has voltage constants which are related to certain temperatures, and that the control unit notices that temperatures have drifted if the voltage amounts have drifted. However, this in no way teaches using a target temperature value with calibration data in accordance with an ambient temperature to acquire a second target temperature value. Accordingly, Applicant maintains that Atwood fails to teach the use of calibration data as recited in independent claim 16.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose *each* and *every* element of the claim within the reference. Therefore, Applicant respectfully submits that claim 16, as now amended, is not anticipated by the prior art of record. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections - 35 U.S.C. § 103

In paragraphs 7-10 of the Office Action, claims 5, 9 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Atwood in view of International Patent Publication No. WO 89/09437 (Dean). Claims 6, 7, 10 and 11 are rejected as being unpatentable over Atwood, Dean, and U.S. Patent No. 5,802,856 (Schaper). Claims 8, 12 and 13 are rejected as being unpatentable over Atwood, Dean, Schaper, and U.S. Patent No. 6,626,236 (Bandoh). Claim 14 is rejected as being unpatentable over Atwood, Dean, Schaper, Bandoh and Japanese Patent Publication No. 2003-235544 (Haga). In response, Applicant has amended independent claims 5, 9 and 15 to more clearly distinguish the prior art of record.

As with independent claim 16, independent claims 5, 9 and 15 now clearly recite, in their own terms, that to clarify that the thermometer measures an *ambient air temperature* of an environment in which the device is installed. It is also recited that a second target value is based on a relationship among said target value, calibration data and said ambient *air* temperature, and that the control unit controls the heater and cooling unit with the second target value such that control of temperatures inside the compartments is corrected by using the ambient *air* temperature measured by the thermometer. Clearly this arrangement is *not* disclosed or suggested by the combination of Atwood and Dean.

As discussed in the interview with Examiner Henkel, and as the Examiner helpfully indicated, neither Atwood nor Dean teaches or suggests using an ambient air temperature in conjunction with calibration data and a target compartment temperature to correct control of compartment temperature. As the Examiner pointed out, Atwood and Dean both use plate temperatures but do not use air temperatures as recited in independent claims 5, 9 and 15. As such, Atwood and Dean fail to teach or suggest the amended subject matter of claims 5, 9 and 15.

With regard to the calibration data of independent claim 16, Applicant would again like to simply state for the record that Applicant still believes the prior art fails to teach using

calibration data as claimed. As discussed above in the interview summary, in Atwood the calibration data used to calibrate temperature sensors (paragraph [0331] of Atwood) in stable baths is not data that is used along with a target temperature value and an ambient temperature to find a “second target value” for temperature control. The calibration constants are merely temperature sensor calibration data. The “calibration voltage generator” of paragraph [0323] of Atwood is unrelated to the calibration constants of paragraph [0331]. Paragraph [0323] discloses that the calibration voltage generator has voltage constants which are related to certain temperatures, and that the control unit notices that temperatures have drifted if the voltage amounts have drifted. However, this in no way teaches using a target temperature value with calibration data in accordance with an ambient temperature to acquire a second target temperature value. Accordingly, Applicant maintains that Atwood fails to teach the use of calibration data as recited in independent claims 5, 9 and 15. Dean also fails to remedy this deficiency of Atwood. Dean teaches, on pages 13 and 14, that a “phial thermocouple” temperature sensor is used to sense the sample temperature, and the sensed temperature is used to improve the response of the control unit to control the sample temperature. Even with that teaching with regard to the temperature sensor in Dean, there would have been no reason to use the calibration constants of Atwood to control temperature in the sample as claimed, at least for the reason discussed above that the calibration constants of paragraph [0331] of Atwood are unrelated to the calibration voltage generator of paragraph [0323] and are not used as recited in the independent claims.

It is well settled in U.S. patent law that the mere fact that the prior art can be modified does *not* make the modification obvious, unless the prior art provides an *apparent reason* for the desirability of the modification. Accordingly, the prior art of record lacks any apparent reason, suggestion or expectation of success for combining the patents to create the Applicant’s unique arrangement of a temperature control device.

Moreover, Applicant believes that dependent claims 6-8 and 10-14 are also allowable over the prior art of record in that they depend from independent claims 5 and 9, respectively, and therefore are allowable for the reasons stated above. Also, these dependent claims are further allowable because they include additional limitations.

Therefore, Applicant respectfully requests that these rejections be withdrawn in view of the above comments and amendments.

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In view of the above comments, Applicant respectfully asserts that the pending claims are in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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Dated: November 17, 2011

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